| | Application No. | Applicant(s) |
| *Notice of Allowability* | 09/614,427 | SCHELLHORN, HENRY |
| | Examiner | Art Unit | |
| | Narayanswamy Subramanian | 3624 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *8/26/2004*.

2. ☒ The allowed claim(s) is/are *1-36*.

3. ☒ The drawings filed on *7/12/2000* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All    b) ☐ Some*    c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

      Paper No./Mail Date _____.

    **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date *8/26/2004*

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

## DETAILED ACTION

1.    This is in response to communication dated August 26, 2004. The Examiner has entered

amendments to claims 1, 8, 10, 17, 19, 26, 28 and 35. Applicant's arguments against restricting

the claims are persuasive and hence the Examiner has withdrawn the restriction requirement

made in the last office action. Rejections made under 35 USC § 101 and 35 U.S.C. 112, second

paragraph in Office action mailed on April 14, 2003 (Paper No. 4) are withdrawn in view of the

amendments. Claims 1-36 are now pending in the application and have been examined. The

Examiner has considered the documents listed in the IDS mailed on August 26, 2004.

*Allowable Subject Matter*

2.    Claims 1 – 36 are allowed.

3.    The following is an examiner's statement of reasons for allowance:

The claimed invention pertains to a method, a system and a computer program product

for financial estimation, the method comprising: providing a portfolio of financial instruments on

a database in a computing network, the instruments having a schedule of payment times;

generating a plurality of interest rate scenarios by Monte Carlo simulation using a stochastic term

structure and storing the plurality of interest rate scenarios on computer readable medium;

calculating, for each financial instrument, a set of financial outcomes using a subset of the

plurality of stored interest rate scenarios; interpolating, from the sets of financial outcomes, a

first function that estimates the aggregate value of the portfolio when sampled at the payment

times with an aggregate principal of the portfolio and a first interest rate scenario; providing a

second function that estimates a value for a financial instrument from the portfolio when sampled

at the payment times using a second interest rate scenario; using an interest rate scenario from

the plurality of interest rate scenarios, calculating a value of the second function for each

financial instrument in the portfolio and a value of the first function to estimate, respectively, a

value for the portfolio and an aggregate value for the portfolio; forming a control variate based

upon the estimated value of the portfolio, the estimated aggregated value of the portfolio, and an

expected value of the aggregate value of the portfolio; and managing the portfolio based on the

control variate.

The closest prior art Traub et al (US Patent 6058377) teaches a method, system and a

computer program product for financial estimation, the method comprising: providing a portfolio

of financial instruments on a database in a computing network, the instruments having a schedule

of payment times; generating a plurality of interest rate scenarios by Monte Carlo simulation

using a stochastic term structure and storing the plurality of interest rate scenarios on computer

readable medium; calculating, for each financial instrument, a set of financial outcomes using a

subset of the plurality of stored interest rate scenarios; interpolating, from the sets of financial

outcomes, a first function that estimates the aggregate value of the portfolio when sampled at the

payment times with an aggregate principal of the portfolio and a first interest rate scenario;

providing a second function that estimates a value for a financial instrument from the portfolio

when sampled at the payment times using a second interest rate scenario; and using an interest

rate scenario from the plurality of interest rate scenarios, calculating a value of the second

function for each financial instrument in the portfolio and a value of the first function to

estimate, respectively, a value for the portfolio and an aggregate value for the portfolio. Traub

fails to teach the steps of forming a control variate based upon the estimated value of the

portfolio, the estimated aggregated value of the portfolio, and an expected value of the aggregate

value of the portfolio and managing the portfolio based on the control variate.

The searches separately made by the examiner and the Electronic Information

Center on the databases of USPTO, European Patent Office, Japanese Patent Office, Derwent

Database, Non-Patent literature Databases do not show any patent or non-patent literature

regarding ideas, projects or applications disclosed by the instant invention.

The following list identifies the most relevant prior art pertinent to the claimed invention:

Traub et al (US Patent 6058377) teaches all the features of the claimed invention except

the steps of forming a control variate based upon the estimated value of a portfolio, the estimated

aggregated value of the portfolio, and an expected value of the aggregate value of the portfolio

and managing the portfolio based on the control variate.

Glasserman et al (Reference U) teaches a variance reduction technique for Monte Carlo

simulations using importance and stratified sampling along a small number of key dimensions.

Glasserman fails to teach the steps of forming a control variate based upon the estimated value of

a portfolio, the estimated aggregated value of the portfolio, and an expected value of the

aggregate value of the portfolio and managing the portfolio based on the control variate.

INDYMAC, Inc (WO 00/21011) discloses a system and method for electronically

processing loan data to generate a loan price and multiple pricing scenarios for the loan.

Indymac fails to disclose most of the features of the claimed invention.

Thus, the Examiner considers the novelty of the invention to be a method, a system and a

computer program product for financial estimation using the steps of forming a control variate

based upon the estimated value of a portfolio, the estimated aggregated value of the portfolio,

and an expected value of the aggregate value of the portfolio and managing the portfolio based

on the control variate.

Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for
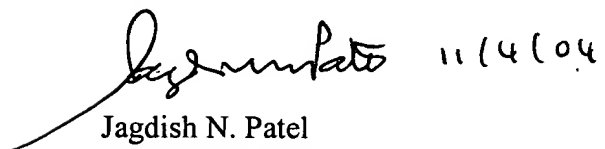
Allowance."

## *Conclusion*

4.      Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dr. Narayanswamy Subramanian whose telephone number is

(703) 305-4878. The examiner can normally be reached Monday-Thursday from 8:30 AM to

7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached at (703) 308-1065.

The fax number for Formal or Official faxes and Draft or Informal faxes to the Patent

Office is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 308-1113.

N. Subramanian
November 5, 2004

11/4/04

Jagdish N. Patel
Primary Examiner